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domekt

DOMEKT REGO RECU P

Series Air Handling Units
Installation and Maintenance Service Manual

EN

Content

Safety Requirements 3
Transportation 4
Brief Description of the Unit 5
Installation 6
Maintenance 7
Technical Information 8
Ordering Key 10

This symbol indicates that this product is not to be disposed of with your household waste, according to the WEEE Directive (2002/96/EC) and your national law. This product should be handed over to a designated collection point, or to an authorised collection site for recycling waste electrical and electronic equipment (EEE). Improper handling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, waste authority, approved WEEE scheme or your household waste disposal service.

Safety Requirements

- To avoid accidents and/or unit damage, only a trained technician must carry out the connection.
- The appropriate Personal Protective Equipment (PPE) attire is worn relative to the operation being carried out.
- Electrical equipment is rated, connected and earthed in accordance with CE regulations.

The air handling unit must be plugged in to an electrical outlet (with earth), which is in good order and corresponds with all requirements of electric safety.
Before starting any operations inside the unit, make sure that the unit is switched off, and the power cable is unplugged.

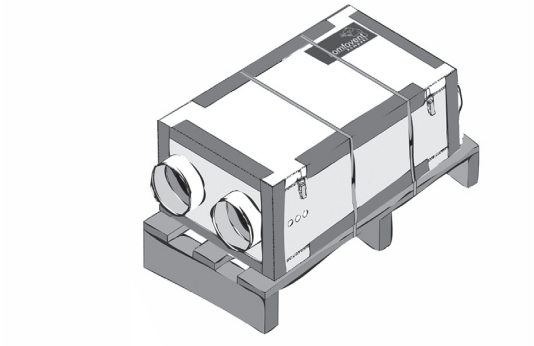
- Earth must be installed according EN61557, BS 7671.
- The unit should be installed according to Installation and Maintenance Manual.
- Before starting the unit, check correct position of air filters.
- Service maintenance should be carried out only in conformity with the instructions specified herein below.
- If main cable is damaged, only manufacturer, service team or trained technician must change it in order to avoid accidents

Transportation

The air handling units are ready for transit and storage (1 Picture). The unit is packed to prevent damage of the external and internal parts of the unit, dust and moisture penetration.

Corners of the air handling units are protected against the damage – protective corners are used. The entire unit is wrapped up in protective film. For transit or storage, units are mounted on timber pallets. The unit is fastened to the pallet with polypropylene packing tape over protective corners.

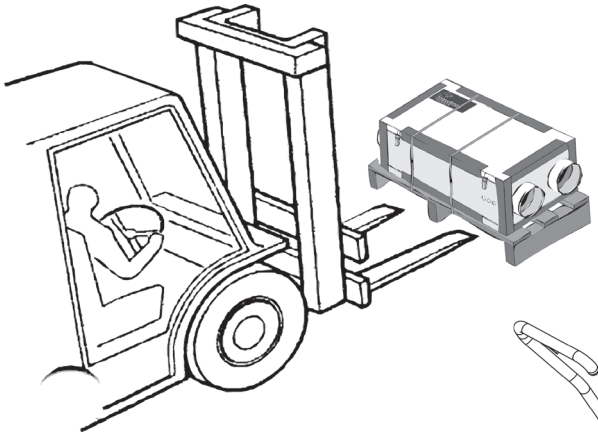
Air handling unit ready for transit and storage



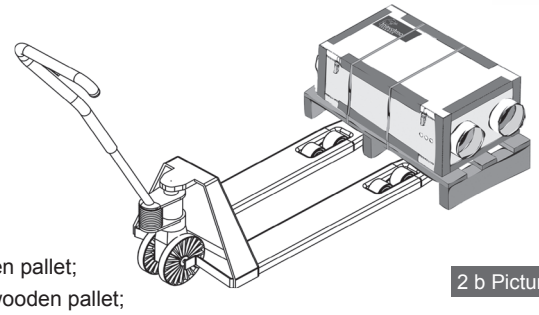
1 Picture

When unit is loaded or unloaded by crane, cargo rope is fastened in its designated places.
Forklift truck or hand pallet truck can transport air handling unit as it is shown (2 a,b,c Pictures).

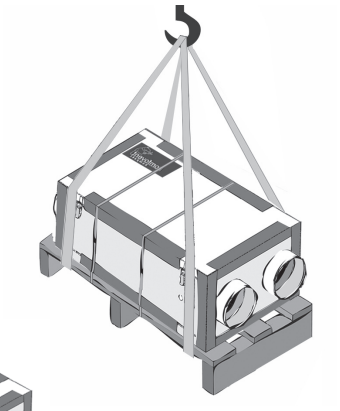
Air handling unit transportation by forklift truck, hand pallet truck or crane



2 a Picture



2 b Picture



2 c Picture

2a Unit is transported by forklift truck on a wooden pallet;
2b Unit is transported by hand pallet truck on a wooden pallet;
2c Unit is lifted by crane on a wooden pallet.

The unit should be examined upon receipt, to ensure that no visible damage has occurred during transit, and the advice note checked to ensure that all items have been received. If damage or delivery shortages are discovered, the carrier should be immediately informed. AMALVA should be notified within three days of receipt, with a written confirmation sent within seven days. AMALVA can accept no responsibility for damage by unloading from carrier or for subsequent damage on site.

If the unit is not to be installed immediately, it should be stored in a clean, dry area. If stored externally, it should be adequately protected from the weather.

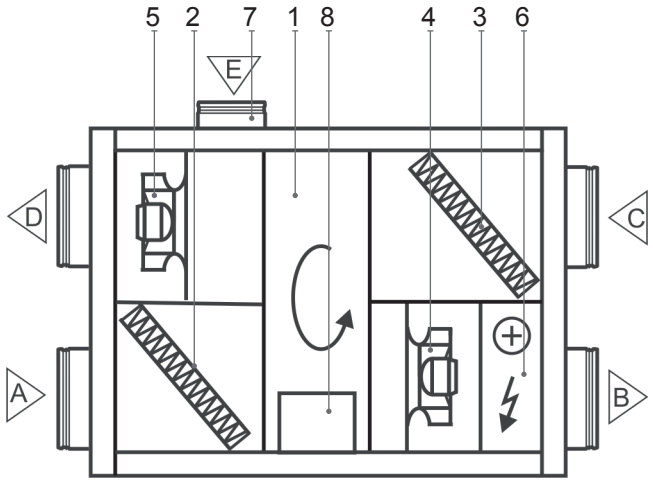
Brief Description of the Unit

- Casings of air handling units are made of galvanized steel sheets, which are powder painted. Mineral wool is used for thermal insulation and sound attenuation. Units cover panels are 25 mm thick.
- The air handling units are intended for ventilation of small and medium-sized spaces (eg. single family houses, offices, etc.), having operating ambient temperature and relative humidity. As standard, the unit is designed for in-door placement. The operating temperature range for the unit is -30^{0}C ... 40^{0}C, outdoor air temperature.
  The air handling unit is not to be used to transport solid particles, even not in areas where there is a risk of explosive gases.
- REGO is equipped with a rotary heat exchanger, RECU - with plate heat exchanger, air filters, an electric or water heater, fans and automation control system, to ensure safe and efficient operation of the unit.
- Before you open the door, the unit must be switched off and the fans must have been given time to stop (up to 3 minutes).
- The unit contains heating elements that must not be touched when they are hot.

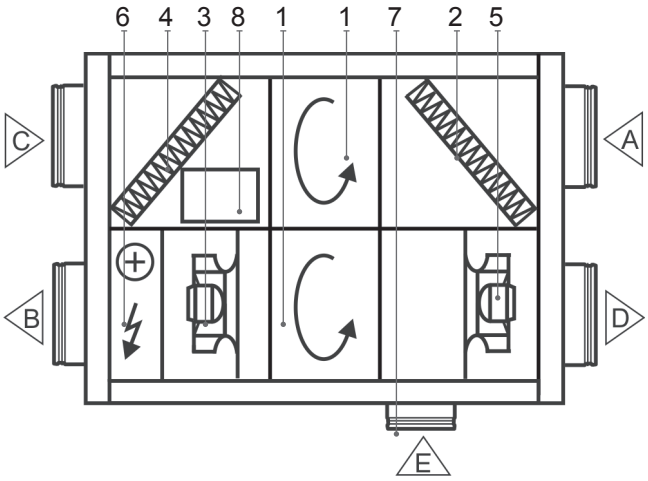
We reserve the right to make changes without prior notice.

- We recommend to leave air handling unit in working mode (minimum 20 percent of power) during the first operation year. Due to moisture in building constructions, condensation may occur inside and outside the air handling unit. Continuous operation of the equipment will significantly reduce the risk of condensation.
- To maintain a good indoor climate, comply with regulations and, to avoid condensation damage, the unit must never be stopped apart from during service/maintenance or in connection with an accident.
- If the unit is placed in spaces with high humidity, condensation might occur on the surface of the unit when outdoor temperatures are very low.

KOMFOVENT DOMEKT REGO RECU Flat Air Handling Units Schemes



REGO 250PE(W*)

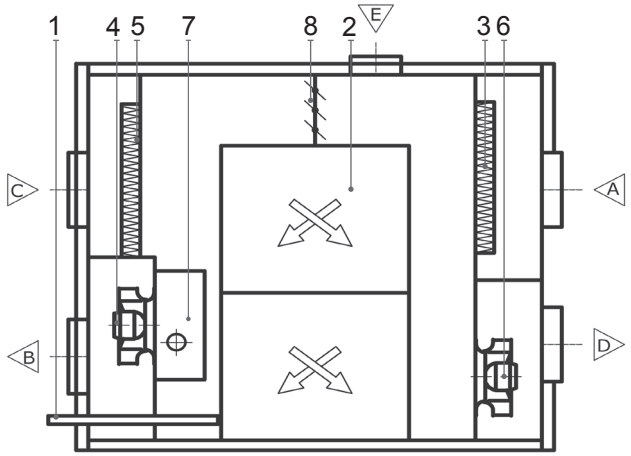


REGO 400PE(W*)

1. Rotary heat exchanger
2. Supply air filter
3. Exhaust air filter
4. Supply fan
5. Exhaust fan
6. Electric air heater
7. Additional connection for air extraction from kitchen
8. Automation control system

3 Picture

RECU 500PE(W*)



- A Outdoor intake
- B Supply air
- C Extract indoor
- D Exhaust air
- E Exhaust air from kitchen hood (if mounted)

1. Condensate drain (the siphon must be installed)
2. Plate heat exchanger
3. Supply air filter
4. Supply fan
5. Exhaust air filter
6. Exhaust fan
7. Electric air heater
8. Air by-pass damper

W* - Ducted DH water heater.

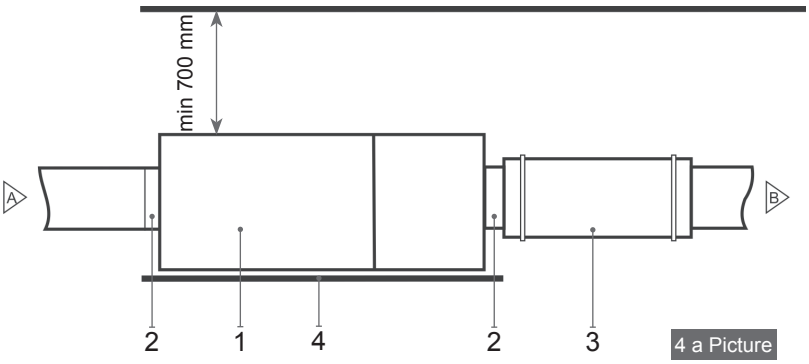
Installation

Maintenance Space Requirements

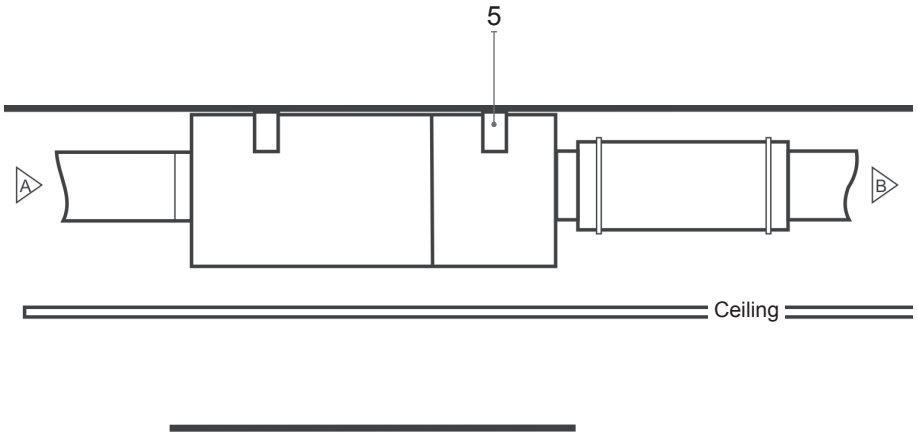
It is recommended to install the air handling unit in a separate room or in the attic on a hard smooth surface insulated with a rubber mat (4 a Picture). The place for the unit should be selected with allowance for minimum access to the unit for maintenance and service inspection. The minimum free space in front of the control panel should be not less than 700 mm.

Air handling units can be also installed over ceiling or on the wall (see 4 b, c Pictures). To hang unit use vibration dampers. Free access to the unit should be projected in ceiling construction. The air handling unit RECU can be installed only to the ceiling, due to position of drainage.

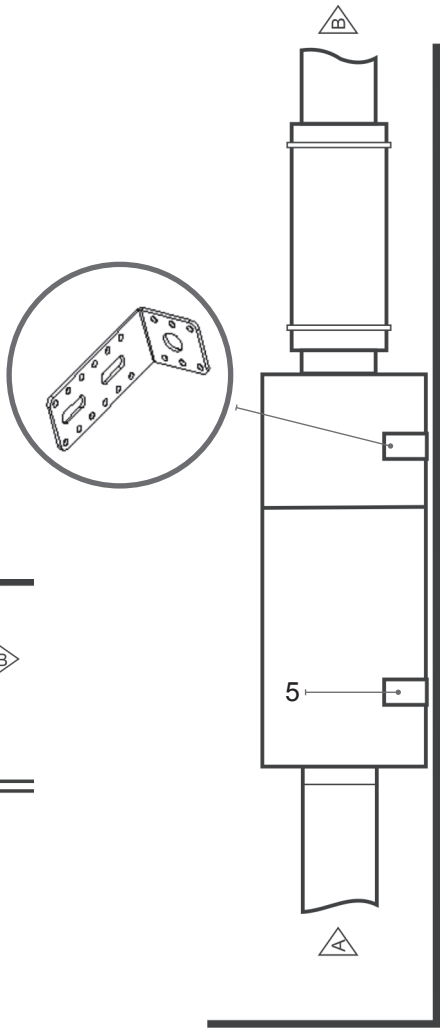
Maintenance Space



4 a Picture



4 b Picture



4 c Picture

1. Air handling unit
2. Ducts connection
3. Sound attenuator
4. Rubber mat (not included in unit set)
5. Holder (4 b, c Pictures)

Unit holder is made of 2,5 mm galvanized steel sheets according to EN 10142.

We reserve the right to make changes without prior notice.

Ductwork

The air flows in/out air handling unit through ductwork. We recommend using galvanized steel (Zn 275 gr/ m^2) ductwork, to ensure easy cleaning and durability. It is necessary to use the ductwork system with low air flow rate and small pressure drop to have necessary air volume and low sound level and save the energy. The appropriate sound attenuators will reduce the noise level of the fans in the premises.

Outdoor and exhaust ductwork should be insulated with 50–100 mm thickness insulation to avoid the condensation.

Note: *temperature sensor B1 has to be mounted in the supply air duct under electric heater (see the functional diagram in Control System Installation and Operation Manual). It is necessary to leave space in straight air duct for sensor mounting and guarantee the space for maintenance and service work. Minimal space between the unit and B1 sensor is the space of double air duct diameter.*

Ductwork, steelwork and any other services should not be supported off the unit.

Final Inspection

After installation of the unit, a thorough inspection should be carried out. This should include inspecting the inside of the unit and removing debris and tools, which may have been left behind by on site contractors. Replace any panels, which may have been removed and close all access doors, ensuring that the door sealing gaskets have not been damaged.

Maintenance

It is recommended to carry out routine maintenance of the air handling unit KOMFOVENT DOMEKT REGO P 3 – 4 times per year.

Besides preventive maintenance inspection, the following operations should be performed:

1. **Rotary heat exchanger check.** Inspection of the rotary heat exchanger is performed once per year. Free rotation of the rotary heat exchanger, continuity of the rotating belt, absence of damages of the rotor drums and the seal gasket are checked. It is necessary to check the stretch of belt. Free belt will slide and the efficiency of rotary heat exchanger will fall down. To reach maximal efficiency, rotor must turn at least 8 times per minute. Polluted heat exchanger will decrease efficiency. Clean heat exchanger with an air blast or wash with tepid water. Check out water falling on the electric motor.

2. **Plate heat exchanger check.** Inspection and dedusting of the plate heat exchanger is performed once per year (it is removed from the unit and blown with an air blast or washed with tepid water).

Note: *plate heat exchanger may be replaced with summer cassette, when recuperation is needless.*

3. **Fans check** (once per year). Polluted fans decrease efficiency.

Before performing any inspection work, check whether the unit is switched off from the electric power supply.

Fans should be carefully cleaned with textile or soft brush. Do not use water. Do not break balance. Check if fan freely rotates and is not mechanically damaged, if impeller does not touch suction nozzles, fan does not spread noise, the pressure tubes are connected to the nozzle (if it is required), mounting bolts are screwed.
The rubber couplings connecting the motor base and the unit should be visually inspected for signs of wear and replaced as necessary.
Any unusual noise or vibration when the fan is running should be immediately investigated, as this usually an indication of wear or imbalance in the fan system.

4. **Air heater check.** Recommended to perform periodical inspection and cleaning of heater. Check the plates of water air heater. The air heater is cleaned with hoover from supply air side or with air blast from exhaust air side. If it is very dirty, wash with tepid water, which will not make corrosion of aluminium. Check if position of return water temperature sensor is right. Check if electric air heater is properly fixed, wires connections are not damaged and heating elements are not bent. They can be damaged or bent due to uneven heat or uneven and turbulent air direction. Check if electric air heater is clear of unnecessary things and heating elements are not clogged, because this can cause unpleasant smell or in the worst case – dust can start burning. Air flow through the air heater should be greater than 1,5 m/s. Heating elements can be cleaned with hoover or wet textile.

5. **Air filter clogging check.** Change air filters when air filter clogging is indicated. We recommend to change filters at least twice per year: before and after heating season, or more*.
   If air handling unit is working in small speed, the filters must be checked on unit maximum speed. Filters are one time used. We do not recommend cleaning them. Stop the air handling unit before changing filters.
   **** Clogged filters unbalance ventilation system, air handling unit uses more power.***

Technical Information

Type	**Weight, kg**		**Supply voltage, V**	**Opera-ting current, A**		**Heater capac-ity, kW**	**Fans input power, W**		**Ducts con-nection, mm**	**Filter class** (Supply / Exhaust air)	**Filter type**	**Dimen-sions bxhxl, mm**
REGO	AC	EC		AC	EC		AC	EC				
250 PE	40	41	1~230	5,1	5,7	1,0	2x58	2x77	160	F5 / F7	Panel	278x258x46
250 PW*	40	41	1~230	1,76	1,36	1,0	2x58	2x77	160	F5 / F7	Panel	278x258x46
400 PE	57	62	1~230	5,9	6,9	1,0	2x135	2x165	200	F5 / F7	Panel	278x258x46
400 PW*	57	62	1~230	1,56	2,56	1,5	2x135	2x165	200	F5 / F7	Panel	278x258x46
RECU	AC	EC		AC	EC		AC	EC				
500 PECF	-	70	1~230	-	6,9	1,0	-	2x165	200	F5/F5	Panel	410x200x46
500 PW*CF	-	70	1~230	-	2,56	1,5	-	2x165	200	F5/F5	Panel	410x200x46

W* - Ducted DH water heater.

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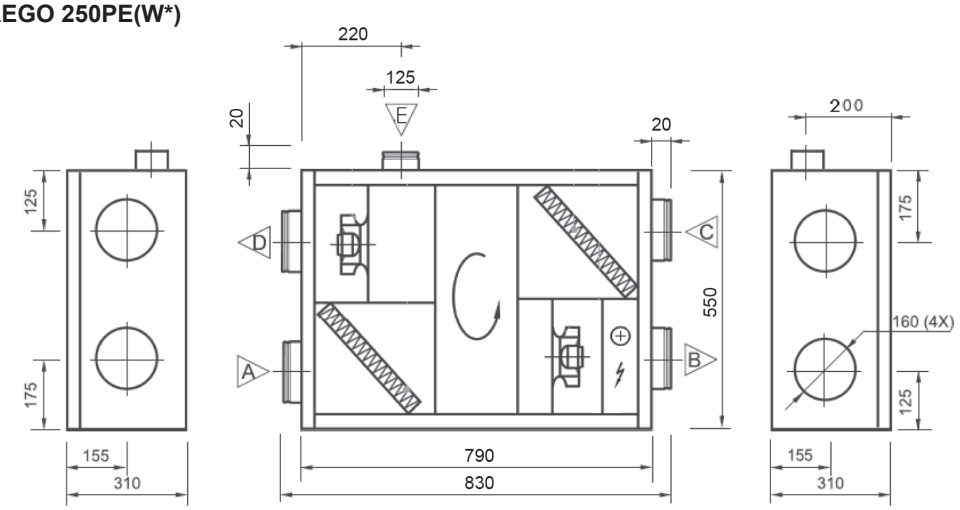
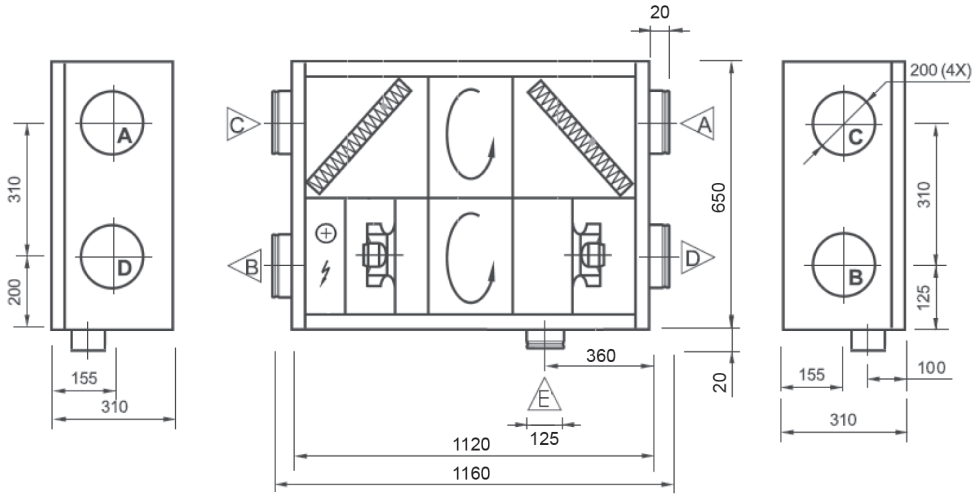
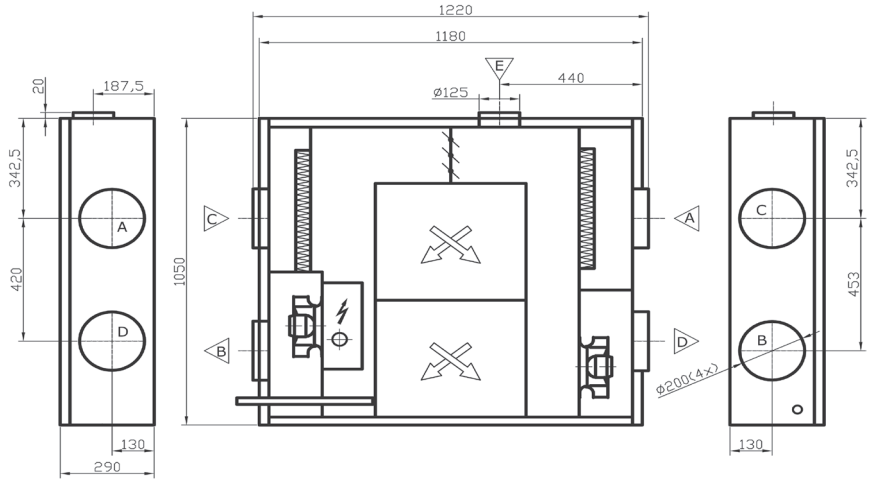
REGO 250PE(W*)



REGO 400PE(W*)

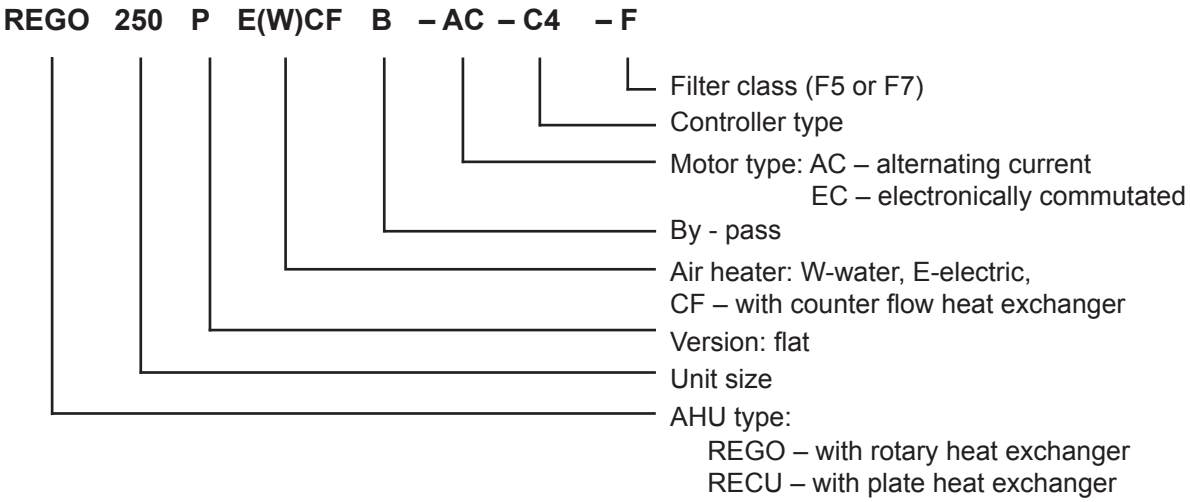


RECU 500PE(W*)CF



W* - Ducted DH water heater.

Ordering Key


REGO 250 P E(W)CF B – AC – C4 – F
Filter class (F5 or F7)
Controller type
Motor type: AC – alternating current
EC – electronically commutated
By - pass
Air heater: W-water, E-electric,
CF – with counter flow heat exchanger
Version: flat
Unit size
AHU type:
REGO – with rotary heat exchanger
RECU – with plate heat exchanger

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